

# ***PRINCIPLES AND PRACTICES OF SUCCESSFUL ALFALFA ESTABLISHMENT***

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Alfalfa is the most widely known forage crop, due to its high quality and the versatility of use. There are few forages that are as widely distributed as alfalfa, and none that can produce the high yields and high quality. Even with all of the positives of alfalfa, growing this crop profitably is often difficult. An evaluation of alfalfa budgets shows that a key factor in the success with alfalfa is the stand life. Because of the establishment expense, an extra year or two of production can increase the lucrativeness of the stand. The start of having a long life of an alfalfa stand is at establishment. If an alfalfa hayfield or pasture is weak at establishment, then stand life will be short. Getting a good, thick stand of alfalfa provides the opportunity to harvest a field profitably for several years.

The principles of alfalfa establishment are the same as with any other crop. The difference between alfalfa and most crops is that the initial stand is as good as it will get. Autotoxicity prevents seeding into an old stand to thicken it up. Being perennial, you don't really get another chance next year to plant again. Your first effort needs to be a good one. Paying attention to the following details should provide the best opportunity to get a thick stand of alfalfa.

## **Steps prior to planting**

Much of the work for alfalfa establishment should be done a year or two ahead of planting. Planning ahead can be the key to success. Following the guidelines below can prevent some major catastrophes in establishment.

- 1. Select the proper site.** Alfalfa should be grown on what is considered the best soil on the farm. A deep, well-drained soil is needed for the alfalfa to develop a vigorous root system. Poor drainage will increase disease problems, result in more winter kill, and cause lower yields and shorter stand life.
- 2. Get weeds under control.** If there is heavy weed pressure in the area, take the season ahead of planting to clean up these weed problems. Even though there are several herbicides that are labeled to use in alfalfa, it is easier to kill most weeds, particularly perennial broadleaves, when there isn't the concern of trying to kill weeds without killing alfalfa.

3. **Fertilize and lime according to a soil test.** The proper pH and fertility is essential for good seedling vigor. A pH of 6.5 - 7.0 is recommended for alfalfa. If lime is needed, apply the recommended amount of lime before soil cultivation for conventional planting, and at least six months ahead of seeding if no-till methods will be used. If the pH is below 5.8, seeding alfalfa no-till may not be desirable until a soil test shows an adequate pH. Be sure to apply the recommended amounts of phosphate and potash at seeding. Two pounds per acre of boron should also be applied.
4. **Select a recommended variety.** More alfalfa varieties are available than any other hay crop. There are large differences between varieties in yield potential, pest resistance and winter hardiness. One of the biggest mistakes that can be made is to pay attention to all the other details in establishment, and then decide to try and save a little money by selecting uncertified seed or seed of an inferior variety. Check with your local Extension office for the current list of recommended alfalfa varieties.

Most recommended varieties are pre-inoculated with the proper *Rhizobium* bacteria. If the seed is not coated, be sure to apply alfalfa inoculant to the seed prior to planting. Consider using some type of sticker material to help the inoculant stay on the seed during planting. Proper inoculation is required for root nodulation and nitrogen fixation.

### Steps for successful seeding

Once the preparations are made, the process of seeding is relatively simple. There are a few details to pay attention to in order to get a strong establishment of alfalfa.

1. **Seed at the proper time.** Alfalfa can be seeded in both the spring and fall in the upper south. In the past, the predominant time of seeding has been fall. Fall seedings usually need six to eight weeks to germinate and grow before the first hard freeze. Alfalfa should be seeded from August 15 to September 15. Do not plant before adequate moisture is available in the soil.

It is important for the alfalfa to have adequate growth going into the winter because of the potential damage from sclerotinia stem and crown rot. Crown rot is a fungal disease that infects plants in the late fall/early winter. Young, fall-seeded plants are at the greatest risk of death because they are not big enough to withstand the disease. Early seeding allows plants to be larger, giving them a better chance to withstand the disease. However, early seeding does not necessarily ensure immunity. If sclerotinia has been a problem previously, consider establishing the alfalfa in the spring. **If you plan to use no-till, avoid fall planting.** Seedlings planted no-till do not establish as quickly as those planted conventionally, and will be smaller and more susceptible to crown rot damage.

If you will be spring seeding, plant from March 1 to May 1. Spring seedings generally require an early application of a grass herbicide to decrease crabgrass competition. Be sure to plant the alfalfa after the danger of frost has passed.

2. **Place the proper amount of seed into a good seedbed.** Alfalfa should be seeded at the rate of 15 to 20 pounds of seed per acre for a pure alfalfa stand. The alfalfa can be seeded into a prepared seedbed, or seeded no-till into a killed sod. If no-till methods are to be used, be sure that all existing vegetation has been chemically killed. Seed should be placed  $\frac{1}{2}$  to  $\frac{1}{4}$  inch deep. If a no-till drill is used, be sure to take a few minutes to check the seeding depth. These drills are heavy enough that seed can be easily planted too deep for acceptable emergence.

Also be sure to calibrate the drill or other seeder used for planting. Do not take for granted that the calibration chart on the drill or in the manual are correct. Without checking the seed flow, all of the seed might be put on only half of the field, or you might have to travel over the field again to get all of the seed distributed. A few minutes before planting can save a lot of time.

In many cases, grasses must be seeded with the alfalfa to reduce soil erosion during stand establishment. In this situation, use 15 pounds of alfalfa with 6 pounds of either orchardgrass or tall fescue, or 4 pounds of timothy. If tall fescue is used, be sure to use an endophyte-free variety. The endophyte can still result in reduced performance in animals grazing or consuming hay from infected tall fescue, even if it is in a mixture with alfalfa. The effect of the endophyte may be reduced because of the alfalfa, but animal performance will be superior when an endophyte-free tall fescue, orchardgrass or timothy variety is used.

3. **Control weeds during establishment.** Competition from weeds can be one of the major factors limiting alfalfa stand establishment. Most weed species grow very rapidly as seedlings, and are more competitive than the alfalfa seedlings for light and nutrients. Weeds such as henbit, chickweed and annual ryegrass can be problems in fall-seeded alfalfa, while crabgrass is a major competitor in spring-seeded alfalfa. Herbicides can be used to reduce this competition. If a grass is seeded with the alfalfa, grass herbicides cannot be used. Check with your local Extension office about current alfalfa herbicide recommendations.

Paying attention to details well ahead of planting, and then following recommended practices during the seeding process can help ensure that a good stand of alfalfa is established.